



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/325,636 | 06/04/1999 | HIROAKI OOKI | P99.0601 | 3047 |

33448 7590 06/03/2004

ROBERT J. DEPKE LEWIS T. STEADMAN
HOLLAND & KNIGHT LLC
131 SOUTH DEARBORN
30TH FLOOR
CHICAGO, IL 60603

EXAMINER

MOE, AUNG SOE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2612

DATE MAILED: 06/03/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/325,636

Applicant(s)

OOKI, HIROAKI

Examiner

Aung S. Moe

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 4 is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 2612

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/19/2004 have been fully considered but they are not persuasive.

Regarding claims 1, 3 and 5, the Applicant alleged (in page 6 of the remarks) "claims 1, 3 and 5 require that the logic levels applied to the transfer electrodes assume only two logic levels, either a high state or a low state logic level. The Suzuki reference is directed to a much different transfer method and employs a tri-state signal protocol, thus, neither Suzuki nor any other reference of record provides any teaching or suggestion whatsoever regarding Applicants new and improved signal transferring method."

In response, the Examiner respectfully disagrees because Suzuki does in fact show the driving pulses applied to the transfer electrodes (i.e., the electrodes of V1-V4 as shown in Fig. 7) are set to only a high level (i.e. noted that when the voltage V_h/V_m is applied to the electrodes of V1-V4, the driving pulses is considered as "High"; see Figs. 15) or a low level logic value (i.e., noted that when the voltage V_l is applied to the electrodes of V1-V4, the driving pulses is considered as "Low"; see Figs. 15) as amended in the present claimed invention. In view of this, Suzuki does in fact anticipated the present claimed invention, thus, the Examiner will maintain the rejection as follows:

Art Unit: 2612

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U.S. 6,515,703).

Regarding claim 1, Suzuki '703 discloses a driving method for a solid-state image sensing device (Figs. 7A to 7D; col. 1, lines 25+) having a plurality of sensor portions (i.e., the element 20 of Fig. 7A) arranged two-dimensionally in a horizontal and vertical directions, and a vertical charge transfer portion (i.e., the element 21 of Fig. 7A) adjacent said plurality of sensor portions (20) provided with transfer electrodes (i.e., noted from Figs. 7A-7D that the transfer electrodes are connected between the photosensors 20 and the transfer gate of the vertical transfer portions 21 respectively to read out the charges from the image sensor by respectively applying the driving pulses V1-V4 during a vertical transfer operation; see Figs. 15; col. 11, lines 55-col. 12, lines 15+), comprising the steps of:

selectively applying high level driving pulses to groups of said transfer electrodes in a vertical transfer period (i.e., noted from Figs. 7A and 15 that the driving pulses' V1-V4 are

Art Unit: 2612

respectively applying to groups of transfer electrodes connected between the plurality of sensors 20 and the vertical transfer gates V1-V4; col. 11, lines 55+ and col. 12, lines 1+); and transferring the signals charges read out from said plurality of sensor portions in the vertical directions (i.e., col. 12, lines 1-15);

wherein a period during a vertical transfer operation (i.e., noted the period for V1-V4 for vertical transfer operation shown in Fig. 15), in which the number of groups of transfer electrodes receiving high level driving pulses becomes minimum (i.e., noted from Fig. 15I that the period between t1-t2, only minimum of two transfer electrodes are connected to the vertical transfer gates V1 and V3 which are set high) is set longer than that of the other sectional periods (i.e., noted from Fig. 15I that the period between t1-t2, which contain only minimum of two high driving pulses, is set longer than the sections between t4-t5, t5-t6, t6-t7 and t9-t10, which contains more than two high driving pulses; see Fig. 19(I); col. 14, lines 25+, col. 15, lines 60+ and col. 18, lines 25+), and further wherein the driving pulses applied to the transfer electrodes (i.e., the electrode of V1-V4 as shown in Fig. 7) are set to only a high level (i.e. noted that when the voltage V_h/V_m is applied to the electrodes of V1-V4, the driving pulses is considered as “High”; see Figs. 15) or a low level logic value (i.e., noted that when the voltage V1 is applied to the electrodes of V1-V4, the driving pulses is considered as “Low”; see Figs. 15).

Regarding claim 3, the method claim 3 is corresponded to the claim 1 as rejected above, thus, the claim 3 is rejected for the same reasons with respect to claim 1 as discussed above (i.e., see Examiner's comments with respect to claim 1 above).

Art Unit: 2612

Regarding claim 5, Suzuki '703 discloses a charge transfer device (Figs. 7A to 7D) having a charge transfer portion with transfer electrodes (i.e., noted from Figs. 7A-7D that the transfer electrodes are connected between the photosensors 20 and the transfer gate of the vertical transfer portions 21 respectively to read out the charges from the image sensor by respectively applying the driving pulses V1-V4 during a vertical transfer operation; see Figs. 15; col. 11, lines 55-col. 12, lines 15+);

wherein high level driving pulses are selectively applied to different groups of said transfer electrodes in respective time periods in a charge transfer period (i.e., as shown in Figs. 7A-7D and 15, based on either the filed reading or frame reading, the transfer pulses for the vertical transfer gates V1-V4 are selectively applied to the different groups of the transfer electrodes for selectively read out the charges from the specific rows; see col. 13, lines 1-5, col. 18, lines 2+); signal charges in the charge transfer portion are transferred (i.e., col. 1, lines 30+ and col. 12, lines 2+); and a period in a charge transfer operation (i.e., the period between t1 and t2 as shown in Figs. 15I and 19I), in which a number of groups of said transfer electrodes (i.e., all the transfer electrodes connected to the V1/V3) receiving high level driving pulses become minimum (i.e., noted from Fig. 15I that the period between t1-t2, only minimum of two transfer electrodes are connected to the vertical transfer gates V1 and V3 which are set high) is longer than that of the other periods (i.e., noted from Fig. 15I that the period between t1-t2, which contain only minimum of two high driving pulses, is set longer than the sections between t4-t5, t5-t6, t6-t7 and t9-t10, which contains more than two high driving pulses; see Fig. 19(I); col. 14,

Art Unit: 2612

lines 25+, col. 15, lines 60+ and col. 18, lines 25+), and further wherein the driving pulses applied to the transfer electrodes (i.e., the electrode of V1-V4 as shown in Fig. 7) are set to only a high level (i.e. noted that when the voltage V_h/V_m is applied to the electrodes of V1-V4, the driving pulses is considered as “High”; see Figs. 15) or a low level logic value (i.e., noted that when the voltage V1 is applied to the electrodes of V1-V4, the driving pulses is considered as “Low”; see Figs. 15).

Allowable Subject Matter

4. Claims 2 and 4 are allowed.

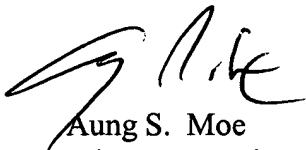
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
May 28, 2004